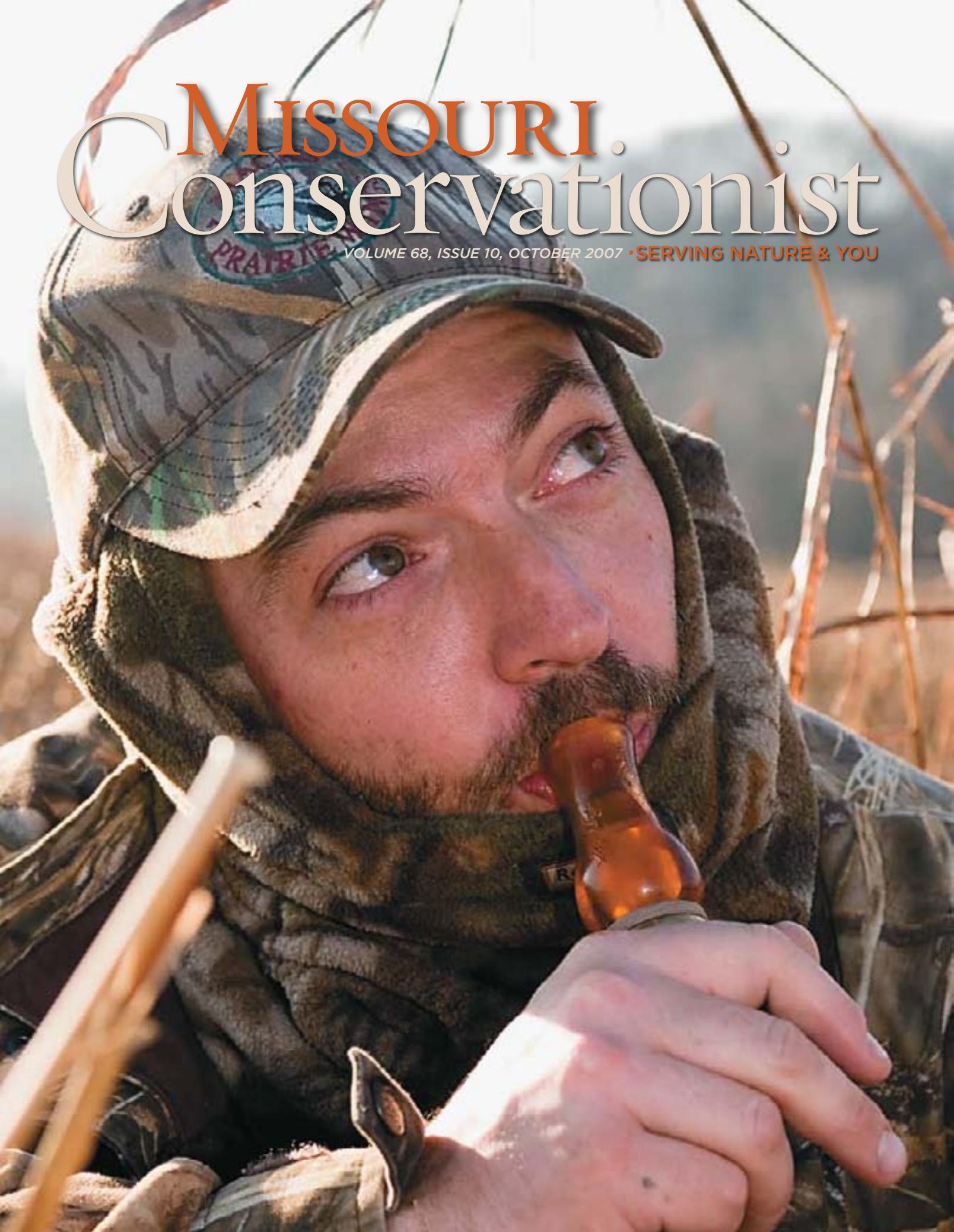
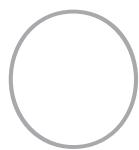


MISSOURI. Conservationist

VOLUME 68, ISSUE 10, OCTOBER 2007 • SERVING NATURE & YOU



Uncle Jack's Flowers



One day this summer we got a call from my wife's uncle Jack. He said, "Jeanette and I have a real crop of wildflowers this year, and I think you need to see them." We eagerly grabbed the

camera and the bug spray knowing we were in for a real treat.

We went to a part of Jack's property called the Old Protsman Place because, like many properties in the Ozarks, it remains tied to the name of its early pioneers. Jack is a farmer with land, cattle and all the hard work that goes with this lifestyle. He is also a naturalist, a hunter, a seeker of knowledge and a lover of things beautiful, delicate and wild.

The Baron Creek Church is just up the road from the home where Jack was raised, and his family attended regularly. Throughout his childhood, he helped his mother find fresh wildflowers to decorate the church pulpit, and he was especially good at finding wild azaleas (*Rhododendron prinophyllum*), one of the first showy flowers of spring.

Earning a living on the land often means competing with natural processes while all the time appreciating nature. Deer use Jack's pastures and sometimes damage his fences, but Jack has looked forward to every one of the last 50 deer hunting seasons. In fact, his farm becomes "hunt central" for good friends and relatives who depend on Jack to know where the deer are and to show them a good time. Both of my sons relied upon Jack's patient mentoring and positive attitude to take their first deer.

But, back to the wildflowers. The poet Emerson wrote, "Earth laughs in flowers." If so, the Earth heard a good joke that summer morning. The fields were a feast for the eyes—showy, large plants like gray-headed, yellow and purple coneflowers, butterfly milkweed, black-eyed susan, coreopsis, bee balm and more. Some of the most striking areas were within sight of the fall's most popular deer stands.

Jack pointed out ironweed in bloom and explained that the tall stems, straight and strong, could be used to make arrow shafts for taking small game. As a little boy, Jack made an ironweed arrow, using a small piece of baling wire for the tip and chicken feathers for the fletching. With his homemade bow, he shot the arrow at a bluebird with no expectation of hitting it, but did, and the bird died. I am told he cried at the unfortunate result and learned a valuable lesson.

Jack treated us to many smaller, less conspicuous flowers, like yarrow and sensitive briar, discovered by his discerning eye. He made a special point to show us one of his favorites, leather flower (*Clematis pitcheri*), a small and delicate bloom that most passersby would not notice. For many years, Jack has also kept secret the location and blooming time of lady's slipper orchids and remains committed to their protection.

Jack knows his land, and he made it his business to know wildflowers. He knows where to look and can explain the names and natural history of many native plants. I've seen a few reference books at the farm house, but I bet he's rarely stumped. He is a lifelong learner who shares his knowledge with others and motivates them to continue their outdoor education.

In November, I'll head back to Jack's to enjoy "hunt central," but now I can appreciate what the land yields during other seasons. It reminds me of why I enjoy my own land throughout the year and its seasonal variety. Thanks, Uncle Jack, for giving our family yet another lasting memory!

John Hoskins, director



Gray-headed coneflowers on Jack's farm

OUR MISSION: *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*



FEATURES

14 **Tree City USA**

by Aaron Holsapple, photos by Cliff White

Beautify and develop your community the Tree City USA way.

17 **Conserving an Ozark Cave**

by William R. Elliott, Thomas J. Aley and Catherine L. Aley

Landowners and scientists restore the famous Tumbling Creek Cave.

22 **Making the Rules**

by Eric Kurzejeski

The path of *Wildlife Code* regulations runs through Missouri's citizens.

28 **Take a Break at Powder Valley**

by Tamie Yegge, photos by David Stonner

Get natural relief from urban stress at this St. Louis area nature center.

On the cover: Photographer Cliff White captured this image of a waterfowl hunter at Plowboy Bend Conservation Area. Get information on the upcoming waterfowl seasons, habitat conditions and waterfowl reservation system, and apply or check to see if you have been drawn, on the Department's waterfowl hunting Web page at www.missouriconservation.org/7559.

Left: Photographer Cliff White took this image of Hermann, a city that has earned Tree City USA status. To learn more about the Tree City USA program, read Aaron Holsapple's feature article starting on page 14.

NextGEN

This section reports on goals established in *The Next Generation of Conservation*. To read more about this plan, visit www.missouriconservation.org/12843.

5 PLANTS & ANIMALS

6 PLACES TO GO

7 COMMUNITY CONSERVATION

8 OUTDOOR RECREATION

10 CLEAN WATER

11 HEALTHY FORESTS

12 LANDOWNER ASSISTANCE

13 CONSERVATION EDUCATION

MISCELLANY

2 Letters

4 Ombudsman

4 On the Web

4 On the TV

32 Hunting and Fishing Calendar

32 Contributors

33 Behind the Code

33 Agent Notes

33 Time Capsule



TAKE A BREAK

You now have a firm believer in not mowing. My land management agent, (who is now retired) Mike Martin, got on me for brush hogging everything in

sight. He made a great observation that folks that move to the country from suburbia have a deep inner need to mow. He was right. We do. It's kind of like quitting drinking; it takes a while to get used to.

My new land management agent, Mike Gaskins, now has me using liquid brush hog to kill out the scrub oaks. It works great and is less costly to do than brush hogging.

I stopped brush hogging last year. We now have more deer, turkey, rabbits and even quail have come in. I only keep the trails mowed now. The quail seem to like that. We also have some of the prettiest wildflowers in the fields I used to mow.

If you ever have a hardhead like me you need to convince, bring them here to see the results. We have 130 acres and care for another 70 acres.

Kerry Stewart, Salem

WINGING IT

This hummingbird was trapped in our garage all day and was worn out by the time we found it. It was wrapped in spider webs and barely moving on the ground.

My husband picked up the bird and took it outside. Thinking quickly, he got an ice cube and



dipped it in sugar. As the ice cube melted, the drops fell on the hummingbird's beak where soon a small tongue started licking the drops. At that moment, I took this picture [bottom center]. Shortly after that, the hummingbird flew out of my husband's hand.

Chris Borgmeyer, via Internet

GRANDMA KNOWS BEST

I read the article about deer in the newest edition of *Missouri Conservationist* and was hoping it would mention this, but it only said the deer ran away from people.

My grandson lives in Parkville. There is a walking trail between him and the woods. The deer come out there in the evening and several little kids, around 2 to 7 years old, run down to see them. The deer do not run away; in fact, they come up to meet the kids. Two of these children, ages 2 and 5 years old, are my great-grandsons.

This worries me immensely, and when I'm there I try to get the parents to keep the kids from running down and getting so close to the deer. I think that it is unsafe, but the others don't seem to think deer will hurt a person.

Please let me know if there have been cases of deer hurting people, and if this is an unsafe practice.

Roberta Mills, via Internet

Editor's Note: Deer are wild animals. They can be unpredictable and close personal contact is not recommended. Does with fawns can be aggressive. If you do a Google search using the key words "deer attack" you'll find a number of media reports addressing this issue.

UPDATE: POOSEY CA FALL TOUR

The Poosey CA fall driving tour that usually occurs on the third Sunday of October has been moved to the second Sunday of October this year. The tour will be Oct. 14. The driving tour helps visitors understand the link between sustainable forest management and beautiful, bountiful forests. Poosey's mosaic of upland hardwoods and grasslands creates a masterpiece of fall color.

For more information call 660-646-6122 or visit www.missouriconversation.org/a7935.



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115
Address: P.O. Box 180,
Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730
Central/Columbia: 573-884-6861
Kansas City: 816-655-6250
Northeast/Kirksville: 660-785-2420
Southwest/Springfield: 417-895-6880
Northwest/St. Joseph: 816-271-3100
St. Louis: 636-441-4554
Ozark/West Plains: 417-256-7161

SUBSCRIPTIONS

Phone: 573-522-4115, ext. 3856 or 3249
Address: Circulation, P.O. Box 180,
Jefferson City 65102-0180
E-mail subscriptions: Subscriptions@mdc.mo.gov
Online subscriptions and address changes:
www.missouriconservation.org/15287

Cost of subscriptions:

Free to Missouri households
Out of State \$7 per year
Out of Country \$10 per year

Address Changes: Don't miss an issue due to an address change. Go online, call, write or e-mail us to update your information.

OMBUDSMAN QUESTIONS

Phone: 573-522-4115, ext. 3848
Address: Ombudsman, P.O. Box 180,
Jefferson City 65102-0180
E-mail: Ken.Drenon@mdc.mo.gov

EDITORIAL COMMENTS

Phone: 573-522-4115, ext. 3245 or 3847
Address: Magazine Editor, P.O. Box 180,
Jefferson City 65102-0180
E-mail: Magazine@mdc.mo.gov

MISSOURI Conservationist

GOVERNOR Matt Blunt

THE CONSERVATION COMMISSION

Don Johnson
Chip McGeehan
Lowell Mohler
Becky Plattner

Director John Hoskins
Assistant Director Denise Brown
Assistant Director John W. Smith
Assistant Director Robert Ziehmer
Internal Auditor Nancy Dubbert
General Counsel Tracy McGinnis

DIVISION CHIEFS

Administrative Services Carter Campbell
Design and Development Bill Lueckenhoff
Fisheries Steve Eder
Forestry Lisa G. Allen
Human Resources Debbie Strobel
Outreach & Education Lorna Domke
Private Land Services Bill McGuire
Protection Dennis Steward
Resource Science interim Ronald Dent
Wildlife Dave Erickson

CONSERVATIONIST STAFF

Editor In Chief Ara Clark
Managing Editor Nichole LeClair
Art Director Cliff White
Writer/Editor Tom Cwynar
Staff Writer Bonnie Chasteen
Staff Writer Jim Low
Staff Writer Arleasha Mays
Photographer Noppadol Paothong
Photographer David Stoner
Designer Stephanie Ruby
Artist Dave Besenger
Artist Mark Raithel
Circulation Laura Scheuer

The *Missouri Conservationist* (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: P.O. Box 180, Jefferson City, MO 65102.) Subscription free to adult Missouri residents; out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Mo., and at additional entry offices. Postmaster: Send correspondence to Circulation, P.O. Box 180, Jefferson City, MO 65102-0180. Phone: 573-751-4115. Copyright © 2007 by the Conservation Commission of the State of Missouri.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, national origin, sex, age or disability. Questions should be directed to the Department of Conservation, P.O. Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Printed in USA

 Printed on recycled paper with soy ink



Reader Photo

BIRD HUMOR

Nests are incubators for eggs, nurseries for young and hiding places for brooding parents. Nest building is complex and, though instinctive, birds get more skilled with practice. The drive to build nests is the result of a cascade of hormonal changes in birds usually brought on by lengthening daylight in the spring. Photo taken at Hawn State Park by Scot Ambuel of Edwardsville, Ill.

on the WEB

This month check out our featured Web pages, or go online anytime to learn more about conservation at www.missouriconservation.org.



FALL HUNTING

www.missouriconservation.org/7442

Get information on upcoming deer, turkey and waterfowl seasons. Find out about drawings, reservations and managed hunts around the state.



FALL COLOR REPORTS

www.missouriconservation.org/8422

Check out our fall color information to find scenic driving routes and the current status of forests around the state.



HUNTER EDUCATION

www.missouriconservation.org/8821

Hunter education provides a foundation in hunting safety and ethics. This training has helped reduce Missouri's hunting accident rate by 70 percent.



ASK THE OMBUDSMAN

Q: The last mess of catfish we had tasted like mud. Is this because of something they ate?

A: Off-taste, or off-flavor, is usually caused by water conditions, rather than by what the fish eats. There can be a variety of causes, but the most common occurs when chemicals resulting from blue-green algae are transferred through the gills and digestive tract resulting in bad-tasting fish. Typically these conditions are found in ponds as opposed to streams. The potential for off-flavor is greater during warmer months because blue-green algae thrive in water temperatures of 60 degrees and higher. Remedies include water treatment with chemicals and purging fish with fresh water. Unfortunately, these solutions aren't practical for anglers.

Q: Years ago while fishing with my dad, he caught a large flathead catfish which he called a "kashaan." Is this just another common name?

A: I think you may be referring to "goujon," or something similar. You'll find reference to this and other common names of game fish in Chapter 20 of the *Wildlife Code*. Flatheads are alternately known as goujon, yellow cats and river cats. In some areas, they're called appaloosa cats due to their mottled coloring. One thing about common names, there are plenty of them and the *Wildlife Code* won't cover them all. Learn more at www.missouriconservation.org/15569.

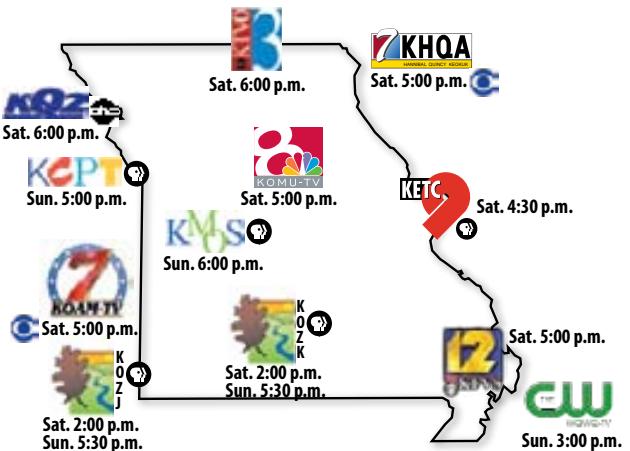
Ombudsman Ken Drenon will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at P.O. Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ken.Drenon@mdc.mo.gov.

on the TV

For additional show information and video clips, be sure to visit www.missouriconservation.org/8726.



Television
the way
nature
intended!





Species of Concern

Black-Tailed Jackrabbit



Common name: Black-tailed jackrabbit

Scientific names: *Lepus californicus*

Range: Southwestern Missouri

Classification: State endangered

To learn more about endangered species: www.missouriconervation.org/8227

ONCE ABUNDANT THROUGHOUT southwestern Missouri, the black-tailed jackrabbit now is as rare as the undisturbed short-grass prairie it needs to survive. Recent surveys have found no jackrabbits in Missouri. If you saw one, you might mistake it for a small dog due to its size. Adults sometimes are more than 2 feet long. Their long, erect ears are a dead giveaway, though. Each of their large bulging eyes has a field of view exceeding 180 degrees, and their senses of smell and hearing both are extremely acute. This makes sneaking up on a jackrabbit nearly impossible. Jackrabbit home ranges can cover 2 square miles. When alarmed, jackrabbits might freeze or move away slowly. If pursued, however, they can cover 20 feet at a bound and top 35 miles per hour. Jackrabbits prefer wild grasses and herbaceous plants but will take crops, such as soybeans, too. In Missouri they are most likely to be found on or near small dairy farms. For detailed information about this and other Missouri mammals, order *The Wild Mammals of Missouri* from the University of Missouri Press, 800-828-1894, <http://press.umsystem.edu>.

PHOTO: USFWS; ART: MARK RATHEL

Stragglers Need Food, Too

Leave feeders out for late-migrating hummers.

Nectar feeders kept full throughout October and November help ruby-throated hummingbirds that get a late start on migration. Late feeding also occasionally attracts species seldom seen in Missouri, such as the rufous, green violet-ear, Anna's, Costa's, broad-tailed, Allen's and calliope hummingbirds. Use an extra-rich mix of one part sugar to four parts water. Also, remember to clean and refill feeders weekly. Don't worry about detaining birds beyond their safe migrating time. They know when it's time to fly south.



Last Hurrah: Cardinal Flower

Fall flames out along streams.

Take along an Ozark stream early this month and you might catch one last glimpse of nature's summer glory. Cardinal flower plants in sunny locations begin blooming in July, but those tucked away in shady corners continue to shoot up flaming, 2- to 4-foot flower spikes well into autumn. Cardinal flower thrives in moist locations and is a stunning addition to small ponds in residential landscapes. Butterflies and hummingbirds savor its nectar. For more information about this and other native plants for home landscapes, order *Tried and True Missouri Native Plants for Your Yard*, available for \$6 plus shipping and handling and sales tax (where applicable), from the MDC Nature Shop 877-521-8632, www.mdcnatureshop.com. Also available at MDC offices with Nature Shops.

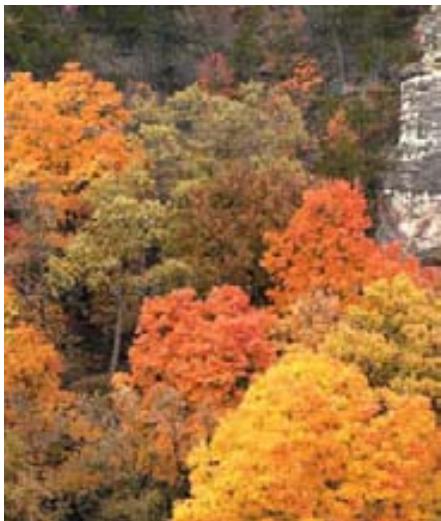




Deer Season Preparation

Get ready for deer season at Scrivner Road CA.

Responsible deer hunters strive for shots that produce quick, clean kills. That means honing shooting skills and ensuring that sights are properly adjusted. To help hunters meet this obligation, the Conservation Department provides 87 staffed and unstaffed shooting ranges statewide. Scrivner Road Conservation Area off Highway AA in Cole County has one such facility, with covered ranges for pistols, rifles and shotguns. For more information about Scrivner Road CA, call 573-884-6861. For information about other Conservation Department ranges, visit www.missouriconservation.org/12359.



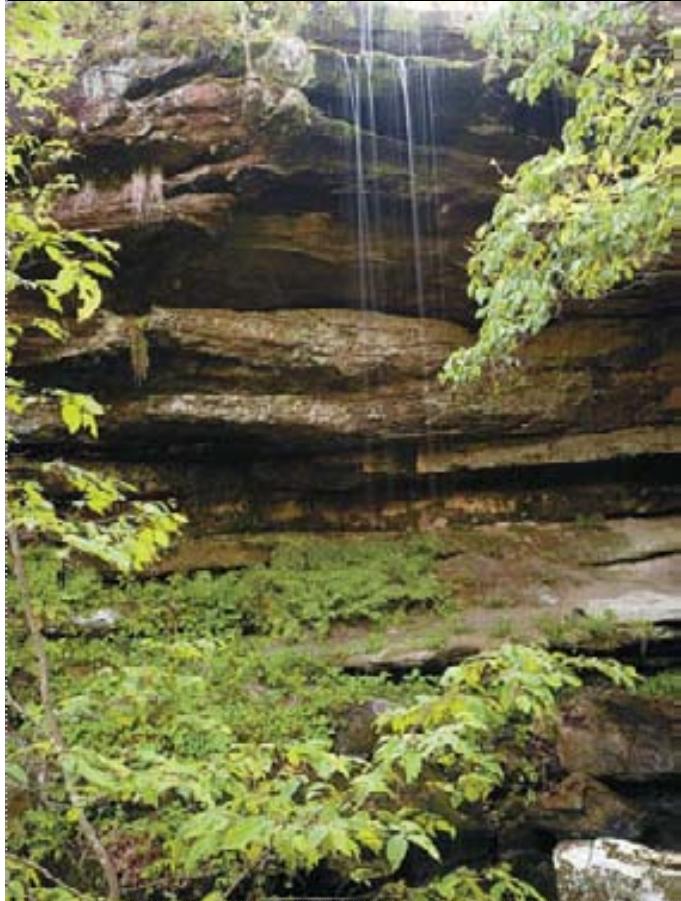
Season of Splendor

Seeing the best of Missouri fall color.

Missourians anticipate the flaming hues of autumn, planning day trips and vacations to take advantage of this season of splendor. The spectacle begins when cool weather shuts down leaves' production of green chlorophyll, exposing underlying red, yellow, orange and purple pigments. Fall color is especially vivid in years when cool, dry weather follows a good growing season. The change normally begins in late September and peaks in mid-October. Fall colors appear first in northern counties and linger latest in southern Missouri. In

the best years, spectacular foliage sets the landscape ablaze everywhere you look. In drought years, river valleys are the best bet for fall color. A few routes offer spectacular views year after year. Maps of these routes are available at Conservation Department offices (see page 3 for regional office phone numbers), at www.missouriconservation.org/8422, or by contacting MDC, Missouri's Fall Colors, P.O. Box 180, Jefferson City, MO 65102, or e-mail pubstaff@mdc.mo.gov.

Trail Guide



PICKLE SPRINGS CA



WHEN YOU FIND yourself surrounded by waterfalls, "hoodoos" and migrating warblers, you know you are in a pickle—Pickle Springs Conservation Area. This 256-acre area in Ste. Genevieve County, including a 180-acre natural area, is a geological and biological treasure trove. Its sandstone bluffs and canyons support an assemblage of plants and animals that make it a National Natural Landmark. Pick up a brochure at the trailhead for a self-guided nature hike. Bring binoculars for a close look at migrating warblers. Also watch for wild azaleas, rattlesnake plantain, cinnamon, lady and maidenhair ferns and liverworts as you hike past Cauliflower Rock, Rockpile Canyon and The Keyhole, plus sandstone chimneys, arches and other "hoodoos"—fantastic rock formations sculpted by wind and water over millions of years. The spring for which the area is named feeds Pickle Creek.

Trail: 2-mile Trail Through Time

Unique features: Waterfalls, "hoodoos" and migrating birds

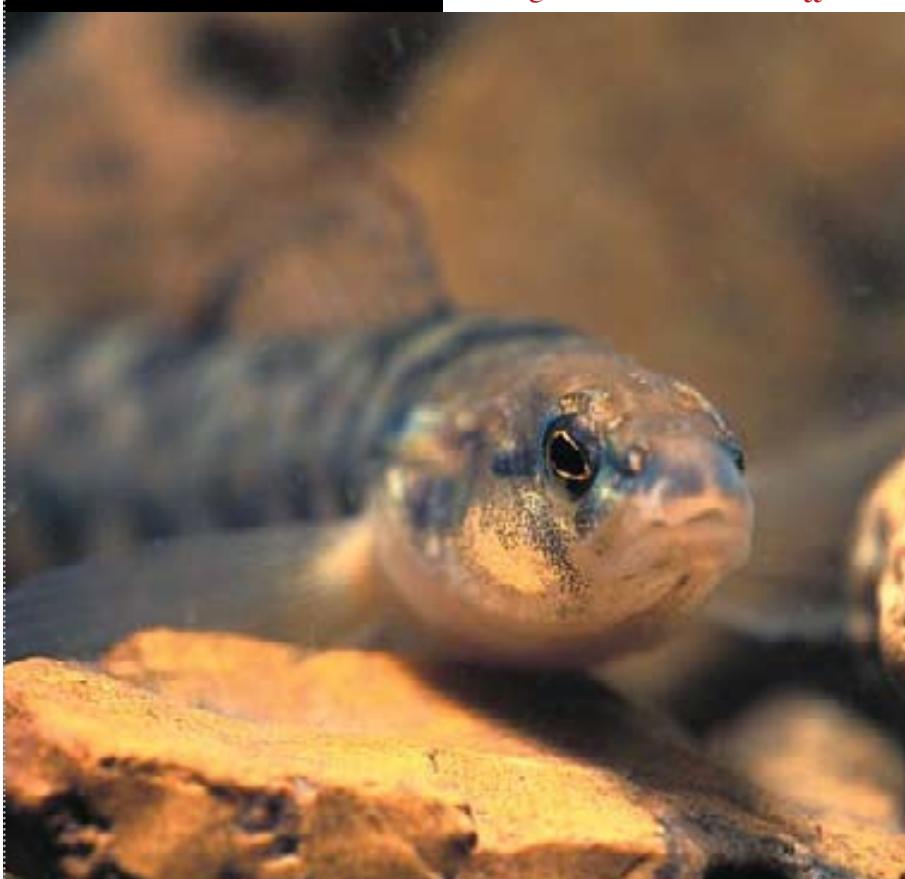
Contact by Phone: 573-290-5730

For more information: www.missouriconservation.org/a8509



TAKING ACTION

Niangua Darter Restoration Effort



Group featured: Department of Conservation, Dallas County Commission, Hickory County Commission, U.S. Fish and Wildlife Service, Federal Emergency Management Agency, Missouri Conservation Heritage Foundation

Group mission: Replace low-water road/stream crossings prohibiting movement of Niangua darters.

Group location: Thomas Creek and Little Niangua River

MOST BRIDGES ARE built solely to accommodate human traffic, but two bridges in west central Missouri also were designed to put Niangua darters on the road to recovery.

Niangua darters became threatened in 1985, due in part to reservoir construction and low-water road crossings that blocked their movement. To combat those problems Dallas and Hickory counties and the Department of Conservation replaced road crossings on Thomas Creek and Little Niangua River with low-water bridges. Removing barriers to fish movement enables isolated darter populations to reconnect, increasing opportunity for genetic diversity in the species and boosting its population. Stream monitoring is being conducted to measure the effects of the projects.

The bridge projects are funded by the Department of Conservation, Dallas and Hickory County Commissions, U.S. Fish and Wildlife Service, Federal Emergency Management Agency and the Missouri Conservation Heritage Foundation.

PHOTO: JIM RATHER; ART: MARK RATHFEL

Arbor Excellence Awards

Honoring those who care for community trees.

our tree care program can be rewarding in several ways. Trees make a community more attractive, provide shade and give countless other benefits, and your tree care program can earn you an Arbor Award of Excellence. The awards recognize towns and groups whose care of trees contribute significantly to their towns and areas, and are part of a sustainable long-term effort.

Nomination applications are accepted through Nov. 28. Download nomination forms at www.missouriconservation.org/7367 or contact Justine Gartner, 573-522-4115, ext. 3116.

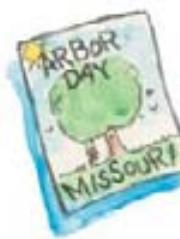


Trees are Terrific

Arbor Day poster contest for fifth graders.

Fifth-grade students are encouraged to showcase their artistic skills in the 2008 National Arbor Day poster contest. The theme for this year's contest is "Trees are Terrific...Inside and Out!"

All fifth-grade art teachers in Missouri will receive packets this month with the poster contest details. Other fifth-grade teachers can request packets by contacting Donna Baldwin, Missouri Poster Contest Coordinator, P.O. Box 180, Jefferson City, MO 65102-0180, or sending an e-mail to donna.baldwin@mdc.mo.gov. The deadline for contest submissions is Feb. 1. The state winner will receive a \$50 savings bond, a 6- to 12-foot tree to be planted on his or her school grounds and entry into the national poster contest.





Hunting Heritage

New law protects hunter rights and riverine habitat.

Governor Matt Blunt recently signed into law the Hunting Heritage Protection Areas Act. The legislation preserves Missourians' rights to participate in hunting and other outdoor sports within heritage protection areas, which are defined as the 100-year flood plains of the Missouri and Mississippi rivers. The new law also protects the flood plains from development by prohibiting the authorization of new tax increment financing projects in many hunting heritage protection areas.



New Youth-Only Seasons

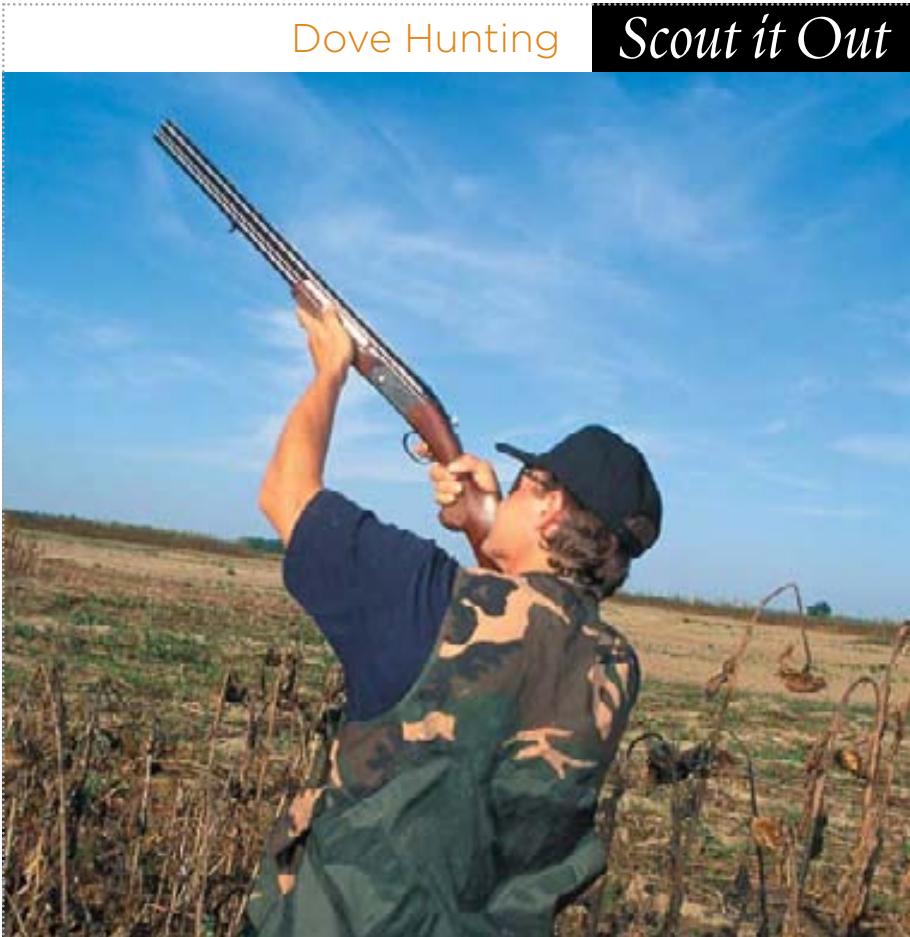
Giving kids a chance to get hooked on hunting.

The thrill of following a bird dog on the trail of game and firing as quail or pheasants explode into the air await youngsters ages 6 through 15. Oct. 27–28 youth in Missouri will have quail and pheasant hunting opportunities all to themselves during the state's first-ever youth-only quail and pheasant hunting seasons. The youth pheasant season is in the north zone only. Youngsters who are not hunter education certified need properly licensed,

hunter education trained adults to take them afield. The adults cannot hunt



but are encouraged to assist youths. Kids with hunter education training can go afield on their own. For information about hunting in Missouri go to www.missouriconservation.org/7604.



Dove Hunting

Scout it Out

Name: Rebel's Cove Conservation Area

Location: 2.5 miles north of Livonia on Route N in Putnam County

For more info: Call 660-785-2420 or visit www.missouriconservation.org/a7944



NEARLY A STONE'S throw away from the Iowa border in north central Missouri hunters will find some of the state's best dove hunting opportunities. Rebel's Cove Conservation Area, just north of Livonia in Putnam and Schuyler counties, contains 45 acres of managed sunflower fields that draw in doves by the scores.

The dove season is open until Nov. 9. Mourning doves, Eurasian collared-doves and white-winged doves are legal to hunt. The combined daily bag limit of all three species is 12, with a combined possession limit of 24. Full details on dove hunting regulations are available in the 2007 Migratory Bird Hunting Digest, available wherever hunting permits are sold.

After your hunt at Rebel's Cove CA, nature viewing, fishing, hiking and camping are among the activities you can enjoy in the area's rich mixture of habitats, which include grasslands, diverse marshes and timbered bluffs that line the winding Chariton River.

Rebel's Cove CA is just one of the 100 conservation areas with fields managed for dove, for more information on these areas visit, www.missouriconservation.org/7469.

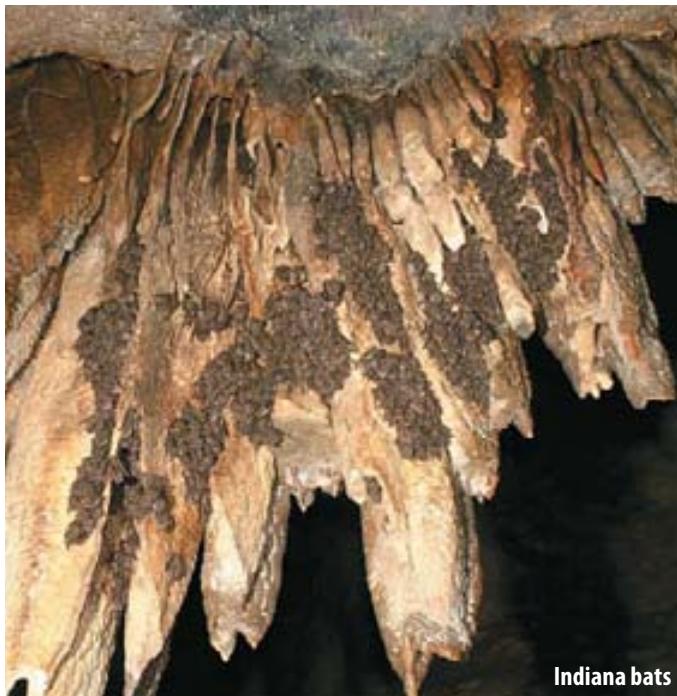


Help Endangered Bats

Don't disturb hibernating gray and Indiana bats.

Cave formations and interesting wildlife make caves wonderful places to explore. A small percentage of Missouri's caves are home to endangered gray and Indiana bats. Both species of bats usually roost in very large numbers, up to hundreds of thousands, which makes them extremely vulnerable to disturbance. If you happen upon a cave and find big clusters of bats in it, you undoubtedly have stumbled upon one or the other of these endangered bats. Disturbance by humans is among the main reasons that these bats are endangered. Each time the bats are awakened from hibernation they use up vital fat reserves that cannot be replaced in winter. Excessive disturbance can cause bats to die or abandon a cave. For this reason, we advise people who encounter a large group of bats in a cave to quietly retreat and allow the bats to roost undisturbed.

Details on the habits and habitats of Missouri bats is available on the Department of Conservation Web site at www.missouriconservation.org/8316.



Indiana bats

FEATHERED FASCINATION



MOBBING: JIM RATHER; INDIANA BATS: WILLIAM R. ELLIOTT

Mobbing

EVER HAVE TO evade birds that appeared to be on the attack? Swooping and dashing at potential predators to drive them away is a defense technique that is called mobbing. Chickadees, titmice, jays, blackbirds and crows are among the many species of birds that mob. Species that have overlapping territories during the nesting season will combine efforts to mob a common threat.

While ornithologists know that mobbing occurs often, they are unsure of the exact benefits mobbers seek to gain. Some suggest mobbing might be a way to teach young birds to identify enemies. The Cornell Lab of Ornithology's *Handbook of Bird Biology* offers these four theories on the value of mobbing:

- To inform the predator that the mobbers are alert to its presence, encouraging the predator to leave and hunt for prey elsewhere.
- To protect offspring by hampering the predator's search for the vulnerable young.
- To alert members of the flock to the presence of a predator.
- To reveal to larger predators the location of the smaller predator being mobbed.

Mobbing is just one of several techniques birds use to defend themselves. To learn more about bird behavior visit www.missouriconservation.org/8159.



Forest Management Tips

Harvest timber while protecting streams.

Stream-side forests produce valuable trees. *Missouri Watershed Protection Practice* is designed to help stream-side forest owners manage their land for profit while ensuring their land's future productivity and keeping streams healthy. The 28-page booklet explains how economical measures, such as filter strips, properly designed stream crossings and water turnouts, can permit timber management while preventing erosion and loss of water quality. You can download a copy of the booklet at www.missouriconservation.org/441. You also can write to MDC, Missouri Watershed Protection Practice, P.O. Box 180, Jefferson City, MO 65102-0180 or e-mail pubstaff@mdc.mo.gov.



Wildlife and Recreation Win

MDC, CoE partner at Columbia Bottom

ish and wildlife habitat along the Missouri River are getting a \$9 million boost from a joint effort of the Conservation Department and the U.S. Army Corps of Engineers (CoE). More than 300,000 acres of flood-plain forests, sandbars, wetlands and fish habitat have been lost to development of the river for navigation and flood control. To help

compensate for this loss, the CoE is funding habitat work at Columbia Bottom Conservation Area. The 4,318-acre area at the confluence of the Missouri and Mississippi rivers is perfectly positioned to help millions of migrating ducks, geese and shorebirds on the Mississippi Flyway. Corps-funded work includes planting 275 acres of native grasses, establishing hardwood forest and creating nearly 800 acres of shallow-water wetlands. State-of-the-art technology will maintain water levels in seven managed wetland pools at optimum levels throughout the year. Deer, turkey and the federally endangered pallid sturgeon also will benefit from the project. Recreational opportunities created by the work will include hunting, fishing, nature viewing, hiking, bicycling and paddle sports.

Stream Team



Bourbeuse River Clean Stream



BOB SNOWSKI AND the late Larry Vogler started Bourbeuse River Clean Stream after a flood revived talk of building dams in the Meramec River Basin. After settling the dam issue, they tackled a flood of trash in their beloved Bourbeuse. "In the beginning, we couldn't get all the debris in seven or eight canoes," says team member Bruce Templer. "Now we're lucky to fill four or five trash bags." In contrast, the number of discarded tires in the river is increasing. "People throw tires in gullies and think that's going to hold their soil," says Templer. "The first good toad-choker rain washes them right into the stream." Each year, the group fills three tandem axle dump trucks provided by Franklin County with tires pulled from 140 miles of river. Ameren-UE shreds the tires and burns them in its power plants. Wal-Mart and a host of local sponsors also support the group's efforts.

Stream Team #: 3

Date formed: March 1985

Location: Franklin County

For more info about Stream Teams: www.mostreamteam.org



Our Glorious Forests

MAPLE WOODS NA



Size: 39.30 acres

Location: Gladstone in Clay County

Highlights: Locally known for fall color, good birding and Maple Woods Nature Trail

Find more info: Call 816-759-7300 or visit www.missouriconservation.org/a7909



THE GLORY OF Missouri's forests is never more apparent than during fall. Take Maple Woods Natural Area, for example. Managed in cooperation with the City of Gladstone in the greater Kansas City area, Maple Woods lives up to its name, featuring a mature forest of sugar maple and oak. Both these species blaze with color during September and October, dazzling the eye and lifting the spirit. In the fall, Maple Woods provides habitat for resident birds, such as woodpeckers and flickers, which may be glimpsed or heard along the area's 1.4-mile nature trail. Whether you live close by or plan to be in the Kansas City area this fall, be sure to take a stroll through this natural oasis. To find other nearby forested conservation and natural areas, use our online atlas at www.missouriconservation.org/2930.

State Logger Award

Ron Tuttle is acknowledged for his outstanding work.

Proving that sustainable harvesting methods matter, Ron Tuttle has won the Department of Conservation's 2007 State Logger Award. A trained professional logger with 20 years of experience, Ron earned the award by meeting several criteria, including good working relationships with landowners and foresters, prevention of soil erosion and addressing wildlife management concerns. To learn more about the State Logger Award and how to qualify for it, go to www.missouriconservation.org/15802.



We All Live in a Forest

Timber stand improvement benefits woodlots of all sizes.

Whether you're managing big timber or a small woodlot, you can use timber stand improvements to boost productivity and enhance wildlife habitat. Timber stand improvement (TSI) is the removal of selected trees from a timber stand to improve its health and growth. Most unmanaged timber stands become overcrowded, causing a shortage of water, nutrients and sunlight for all trees. With TSI, you decide which trees to keep, reducing competition in your stand, slowing the spread of infestations and disease, and improving habitat values for wildlife. The Department of Conservation's free publication, *Timber Stand Improvement*, covers details on conducting TSI. To order write to, MDC, *Timber Stand Improvement*, P.O. Box 180, Jefferson City, MO 65102-0180 or e-mail pubstaff@mdc.mo.gov.





Mow and Spray Fescue

Fescue crowds out quail chicks.

Many quail enthusiasts, such as Randolph County landowner David Swinger, control fescue in the fall. He converted 40 acres of fescue to native grassland and now reports seeing and hearing more quail. If you haven't already, mow or burn fescue now. A few weeks later, set it back with an application of generic, nonselective herbicide. Be sure to mow or burn before spraying to ensure success. For more technical information about controlling fescue



and other invasive grasses for quail, visit www.missouriconservation.org/15235.

Line Up Trappers Now

Trapping this fall will reduce damage next spring.

Now that the weather is getting a little cooler, it's time to think about heading off next spring's nuisance wildlife problems. If you've ever complained about otters in your pond, raccoons in your garden, beavers in your stream or foxes in your chicken coop, you might consider finding an experienced trapper to control problem animals during this fall's trapping season. Trapping is a proven and effective management tool for controlling furbearer numbers and damage. Contact the Missouri Trapper's Association or

your local conservation agent for assistance (see page 3 for regional office phone numbers). Missouri's furbearer hunting and trapping season opens Nov.

15 and runs through Jan. 31, 2008. During this period, potential nuisance animals can be legally hunted and trapped.



Harvest Does to Reduce Crop Damage

On the Ground



WHILE SPORTSMEN APPRECIATE Missouri's large, high-quality deer herd, it can be a bane to farmers and other landowners. Take Ralls County farmer Tom Finnigan, for example. In 2004, the deer hit his soybeans hard enough to make him contact his local conservation agent, Josh Badasch. Josh recommended Tom work with hunters to harvest does. "Doe harvest is the key to population control," Josh says. During archery and firearms season, Tom invited three hunters to aim for does on his property. "They really thinned them out," he said. In general, Agent Badasch advises landowners who want to control deer damage on their property to work with hunting groups. A common practice is to require hunters to harvest one or more antlerless deer before harvesting an antlered deer. Contact your local Department of Conservation regional office (see page 3 for phone numbers) for more information about harvesting does on your property.



Cape Educators Workshop

*"Mammals and Trapping"
focuses on furbearers.*

Whether you're a public school teacher, youth group leader or home-school instructor, you're invited to register for the "Mammals and Trapping" workshop scheduled for 4 to 6 p.m. on Wednesday, Oct. 17, at the Cape Girardeau Nature Center. This Nature in the Classroom Program topic will focus on Missouri's fur-bearing wildlife. Participants will receive background information and lesson plans coordinated with Missouri Department of Elementary and Secondary Education Grade Level Expectations. Rob Sulkowski, Ste. Genevieve County's conservation agent, will give firsthand instruction and advice on trapping. Participants will have a chance to explore the mammals discovery trunk and reserve it for the winter or spring months.

Cape Girardeau Nature Center's Nature in the Classroom Program for educators offers a different topic each month. For more information about the program and upcoming topics, or to register for a workshop, please contact Bridget Jackson, education consultant, at 573-290-5218 or bridget.jackson@mdc.mo.gov.



NATURE ACTIVITY



MAMMALS AND TRAPPING: DAVID STONNER; NATURE ACTIVITY: NOPPADOL PAOTHONG

Burr Oak Woods Nature Center



THIS MONTH BURR Oak Woods Nature Center in Blue Springs celebrates 25 years of connecting people with nature in the greater Kansas City area. On Oct. 20, at 6 p.m., special guests Dorothy and Toto

will lead visitors through the haunted forest to discover who lives in Burr Oak Woods. On Oct. 23, at 10 a.m., 3- to-5-year-olds are invited to join the Itsy Bitsy Spider for a review of conservation programs past and a peek at exciting programs planned for the future. Children 6 and older will enjoy the program scheduled for Oct. 27 at 2 p.m. The "Ghosts in the Forest" program will feature the historical characters that shaped the land that is now Burr Oak Woods. If you would like to participate, all 25th Anniversary programs require reservations, please call 816-228-3766.

Where: 20 miles east of Kansas City in Blue Springs, 1.1 miles north of I-70 on Highway 7, then west 1 mile on Park Road

Features: Visitor center; 33-acre natural area with forested hillsides, scattered limestone boulders and outcrops, glades, fields, ponds, wildlife, streams and native-grass plantings

25th Anniversary Programs: Oct. 20, 23 and 27 (see story for details)
For more info: 816-228-3766 or www.missouriconversation.org/2342





Tree City USA

Beautify and develop your community the Tree City USA way.

by Aaron Holsapple, photos by Cliff White

IN MANY MISSOURI TOWNS, trees on public property outnumber trees on private land. These “public” trees beautify city streets, adorn and shade parks and add character and a sense of permanence to communities.

People love their trees so much that they often name streets after them. How many Elm Streets do we have in Missouri? How many towns have streets named Locust or Maple? How many Willow Lanes? We even have towns named after tree species. Poplar Bluff, Birch Tree and Pineville are just a few examples.

As you drive across Missouri, as well as across the nation, you’ll see many communities proudly displaying the Tree City USA logo. The sign proclaims that the community cares about the environment.

The Tree City USA program, sponsored by the U.S. Forest Service, The National Arbor Day Foundation and the National Association of State Foresters, recognizes communities working to improve the population, health and future growing space of

their public trees. The program provides direction, technical assistance, public attention and national recognition for urban and community forestry programs.

Earning Tree City USA certification is a good deal for communities. Meeting the requirements of the program helps ensure the long-term planning and management necessary to preserve or improve urban forests.

Strong, healthy-growing street trees increase property values, improve the local and global environment by absorbing carbon dioxide and reduce energy consumption by reducing the need for cooling.

Public trees attract people to public places, where community spirit is fostered. They also draw people to shopping areas, which in turn draws businesses to locate in inviting and shaded downtown areas.

Tree City USA certification may also be useful when communities apply for state or national grants for forest-related work or activities. The designation signifies that trees are a

Hermann, Tree City USA



The Hermann Tree Board with the Tree City USA sign that acknowledges the city's achievement.

County, Hermann is well-known for its vineyards, festivals and beautiful scenery, especially in the fall when oaks, maples, hickories and other species growing in the rich riverside soils provide a kaleidoscope of vibrant colors.

Wanting to preserve the area's natural beauty, city officials, working with members of the local garden club, engaged a certified arborist to assess the condition and health of trees on city property. A Tree Resource Improvement and Maintenance (TRIM) grant from the Conservation Department paid for most of the inventory costs.

The inventory determined that the majority of the city's trees were in good growing condition, though many were old and in need of maintenance. About 10 percent of the trees were deemed hazardous or unsightly and in need of removal.

The inventory became a blueprint from which to plan annual tree maintenance. Participants in the planning agreed that the main goals of the city's tree program should be minimizing the city's liability and improving the public tree resources.

Hermann city employees perform most of the tree maintenance. Conservation Department resource foresters conducted several tree care workshops to help the employees learn tree pruning and planting skills.

high priority in the community, and it guarantees that a working infrastructure is in place to manage public trees.

Tree City USA certification also might mean another holiday. One of the four requirements for qualification is for a community to have an Arbor Day observance and proclamation. How communities comply might range from a simple ceremony honoring volunteer tree planters to a day-long festival that can be used as a springboard for helping residents learn more about trees and forest management.

A Success Story

Hermann recently attained the status of Tree City USA.

Hermann City Administrator Steve Mueller said the city's determination and efforts to improve public trees has increased awareness among the population of the value of trees and the necessity for proper management of trees, even on private land. He gave as an example how proper pruning techniques on city property are now challenging the long-established landowner tradition of "topping" trees.

The commitment and concern that led Hermann to seek Tree City USA certification has united residents and increased civic pride. The improvements to Hermann's urban forests are already noticeable and will inevitably lead to healthy trees for generations to come. ▲

Becoming a Tree City USA

There are four basic requirements to gaining Tree City USA status:

- ① A Tree Board or Department
- ② A Tree Care Ordinance
- ③ A Community Forestry Program with an annual budget of at least \$2 per capita
- ④ An Arbor Day Observance and Proclamation

The requirements aren't difficult and are within the reach of any community—large or small. The effort often attracts volunteers, spreading the workload while fostering community pride and spirit.

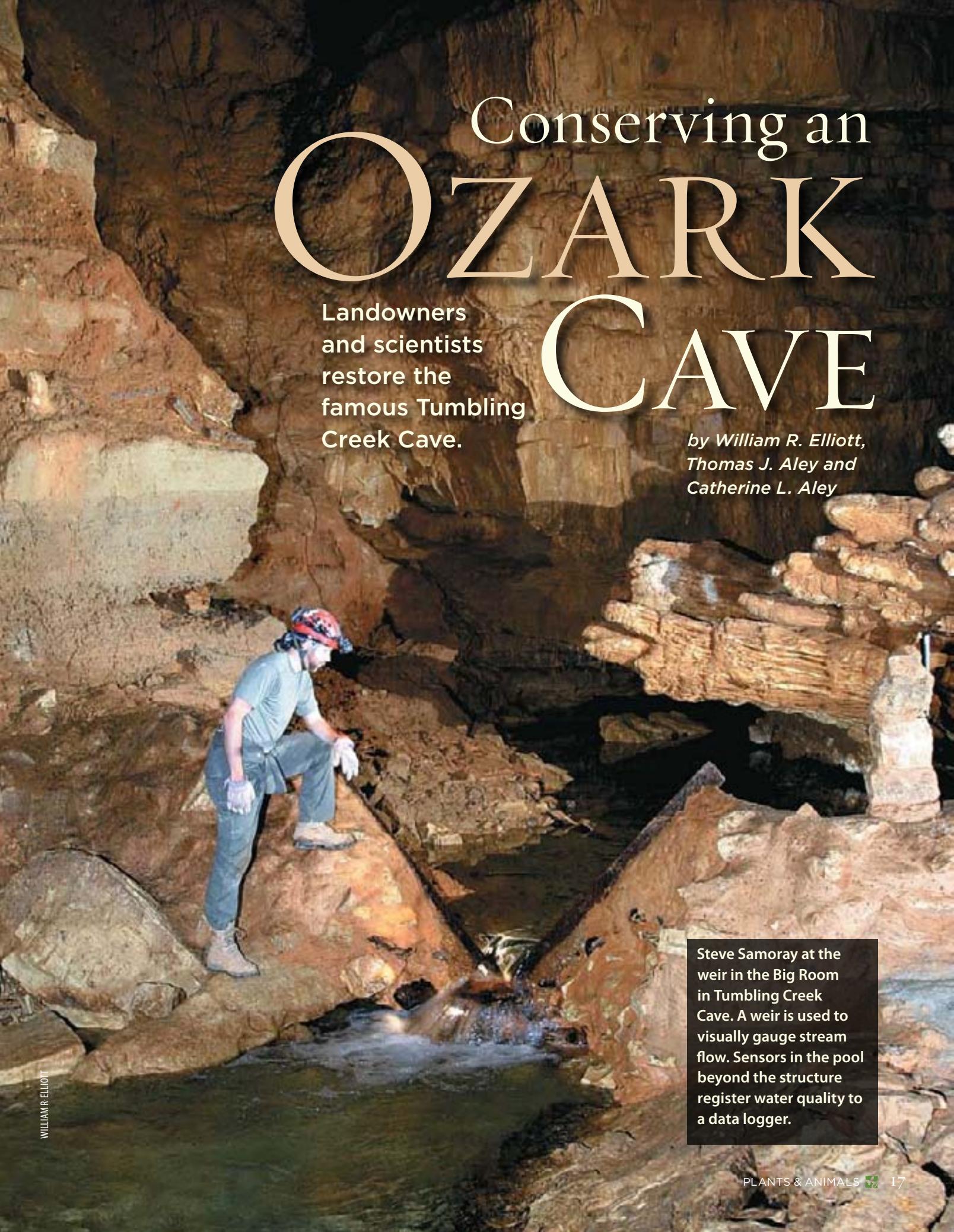
Learn more about the Tree City USA program at www.arborday.org/programs/treeCityUSA, or call 402-474-5655 for a free booklet.

Conservation Department foresters are available to assist any community needing tree care instruction. For assistance in applying for Tree City USA certification, contact your local Conservation Department forester (see page 3 for regional office phone numbers), or go to www.missouriconservation.org/7367 and scroll down to "Tree City USA," where you can download a Tree City USA workbook.

Tree City USA Communities in Missouri

Certification takes place at the end of the year. The following 70 communities had achieved certification at the end of 2006.

Ash Grove • Ballwin • Blue Springs • Branson • Brentwood • Brunswick • Cape Girardeau • Carthage • Centralia • Chesterfield • Chillicothe • Clayton • Columbia • Crestwood • Creve Coeur • Des Peres • Dexter • Ellisville • Eureka • Exeter • Fayette • Fenton • Ferguson • Florissant • Gladstone • Grandview • Greendale • Hannibal • Hermann • Independence • Jackson • Jefferson City • Kahoka • Kansas City • Kearney • Kirksville • Kirkwood • Lake St. Louis • Liberty • Maplewood • Marshfield • Maryland Heights • Maryville • Memphis • Mexico • Mountain View • North Kansas City • Oakland • O'Fallon • Ozark • Parkville • Plattsburg • Raytown • Richmond Heights • Rock Hill • Savannah • Springfield • St. Charles • St. Joseph • St. Louis • St. Peters • Sturgeon • Town & Country • Trenton • Twin Oaks • University City • Warson Woods • Washington • Webster Groves • Willard

A photograph of a man in a cave. He is wearing a red and black patterned bandana, a light blue t-shirt, blue jeans, and brown boots. He is crouching on a rocky ledge, looking down at a stream of water flowing through the cave. The cave walls are made of light-colored, layered rock. The water is dark and reflects the surrounding rock. In the background, there are more rock formations and a dark opening.

Conserving an OZARK CAVE

Landowners
and scientists
restore the
famous Tumbling
Creek Cave.

by William R. Elliott,
Thomas J. Aley and
Catherine L. Aley

Steve Samoray at the
weir in the Big Room
in Tumbling Creek
Cave. A weir is used to
visually gauge stream
flow. Sensors in the pool
beyond the structure
register water quality to
a data logger.

Tumbling Creek Cave in Taney County is a gorgeous cave with a gurgling stream. It also has the highest recorded biodiversity of any cave west of the Mississippi River. The cave has been featured in a *National Geographic* special and in other TV programs, as well as in scientific articles.

The cave harbors three endangered species: gray bats, Indiana bats and Tumbling Creek cavesnails; the last is nearly extinct. Among the 115 different species found in the cave are 12 species of troglobites (cave creatures with reduced or absent eyes and pigment). Two of these troglobite species are found only in this cave.

In addition to its biological wonders, 2-mile-long Tumbling Creek Cave is an important educational and research cave. Since 1969, more than 25,000 people have taken guided tours of the cave. Each college or professional group gets an introduction to karst (areas with caves, springs, sinkholes and losing streams), views sinkholes, then enters the artificial shaft entrance, which has two airlock doors to keep the cave from drying out. The visitors bring their own lights and follow a rudimentary trail with low environmental impact.

Tom and Cathy Aley have led most of the tours. The Aleys established and operate the Ozark Underground Laboratory, which is based on a 2,550-acre tract in southern Missouri. The nonprofit Tumbling Creek Cave Foundation owns 383 acres in the cave's recharge area and around the natural entrance, ensuring protection of the cave into the future.

The Ozark Underground Laboratory has sponsored many studies of the cave. These studies include dye tracing to map the cave's 9 square miles of recharge area that collects water to the cave, determining water infiltration rates into the cave and collecting water quality data from the cave stream.

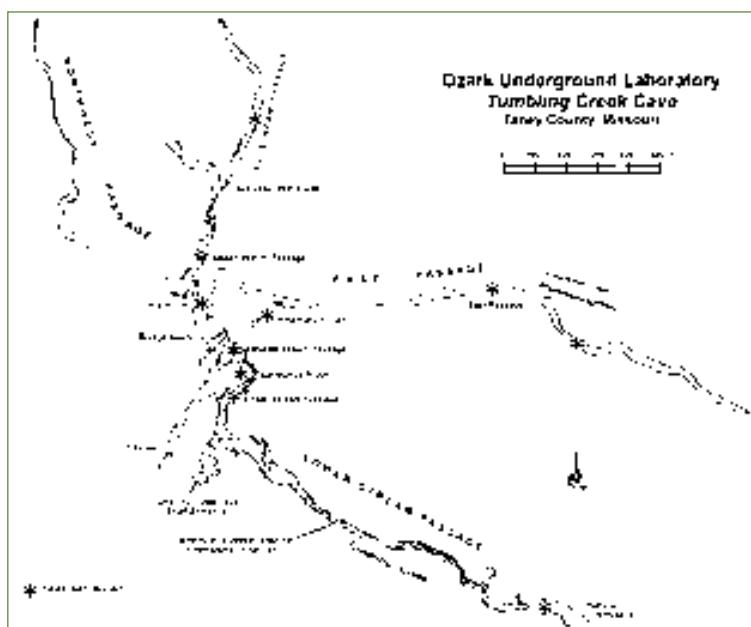
Other research conducted at Tumbling Creek Cave includes studies of cavesnails and stream fauna and bat censuses, as well as studies of bat guano, stalactite drippage and land-use effects on the cave.

Even though Tumbling Creek Cave has been well-protected for more than 40 years, something unexpected happened. Muck visibly built up in the cave stream, which is normally floored with cobbles. Some areas became so mucky that one could not pull up rocks that had been loose.

In addition, the Tumbling Creek cavesnail (*Antrobia culveri*) nearly went extinct. In 1972, a researcher had estimated that 15,000 cavesnails lived under the stream rocks. Fewer cavesnails were noticed by 1991. By 2001 only a few cavesnails could be found.

The Tumbling Creek Cavesnail Working Group brought together landowners and scientists to determine what had happened. We concluded that sediment from surface erosion was the most likely factor affecting the cavesnail population.

Twenty to 30 years ago, many forested areas in Missouri were cleared to create permanent pasture.



Tumbling Creek Cave, Ozark Underground Laboratory, has 9,711 feet of mapped passages.

Troglobites

Twelve of Tumbling Creek Cave's 115 species are cave-adapted troglobites. Species in bold are found only in this cave.

Scientific name

Antrobia culveri
Arrhopalites clarus
Brackenridgia ashleyi
Caecidotea ancyla
Caecidotea antricola
Causeyella dendropus
Chaetaspis aleyorum
Eurycea spelaea
Islandiana sp.
Spelobia tenebrarum
Stygobromus onondagaensis
Stygobromus ozarkensis

Common name

Tumbling Creek cavesnail
Cave springtail
Trichoniscid isopod
Ancyla cave isopod
Antricola cave isopod
Causeyella cave millipede
Aleys' cave millipede
Grotto salamander
Cave spider
Cave dung fly
Onondaga cave amphipod
Ozark cave amphipod



This increased soil erosion, especially on steeper slopes in the first year after clearing or following droughts. Although the cave has no upstream entrance, the sediments worked down through sinkholes and losing streams into the cave.

A Working Group

Our group has worked on many fronts to restore or protect the cave's unique habitat and inhabitants. In 2005, scientists placed terra cotta tiles in a cavesnail refuge area. Cavesnails were recently found on those tiles, creating hope that they may use them for feeding on microbes and laying eggs. Tumbling Creek cavesnails may rescue themselves this way.

In 2006, we built a small cavesnail laboratory in the cave, where we have done preliminary tests. If necessary, cavesnails might be propagated in the lab and then stocked in Tumbling Creek.

We sampled the water with highly sensitive equipment that detects parts per quadrillion, but found only tiny amounts of a few chemicals that were of no concern. Working with the Missouri Department of Transportation to monitor a resurfacing project on Highway 160 in the recharge area, we determined that their "chip and seal" method using an asphalt-water emulsion did not introduce any detectable petroleum products into the road ditches or the groundwater.



WILLIAM R. ELLIOTT

Dr. David Ashley (second from right) leads a cavesnail census in 2007 with Eric Hertzler of the Ozark Underground Laboratory (left), Parisa Tourgoli (second from left) and Laura Rexroat (far right).

We also got help from the Conservation Department, which worked with the Ozark Underground Laboratory and the local community to help a school replace a sewage lagoon that was leaking most of its contents into the groundwater system feeding Tumbling Creek Cave (See *The School and the Cavesnail*; September 2006). A modern peat-filtration system was installed with the help of grants and substantial local contributions.

Because surface and subsurface are connected, caves cannot be protected without protecting the land that contributes water to them.

The Aleys bought nearby properties to help protect the cave and its critters. They used cost-share funds from the Conservation Department and the U.S. Fish & Wildlife Service to plant 70,000 trees to help restore the land.

Although some Ozark Underground Laboratory lands are used for raising cattle or growing hay, the overall goal is to create a landscape dominated by native species, including black oak, northern red oak, white oak, black gum, black walnut, green ash, dogwood, redbud, sycamore and short-leaf pines. Sassafras, hickories and persimmons should reestablish naturally from the surrounding areas.

Thanks to a cost-share project with the National Park Service and Fish and Wildlife Service, 20 farm dumps in sinkholes and in gullies that directly feed losing streams in the recharge area have been cleaned. Many of those dumps contained household chemicals, petroleum products, partially full paint cans, empty pesticide and oil containers with residues, used medical supplies and an unbelievable number of disposable diapers. Cavers from several Missouri groups helped with these cleanups.



Gray bats

WILLIAM R. ELLIOTT

Bat Protection

Bats are extremely important to this and many other cave ecosystems. Most of the energy input to a cave might be from gray bat guano.

Eight species of bats have used Tumbling Creek Cave. The endangered Indiana bat (*Myotis sodalis*) sometimes hibernates in the chilly entrance passage. The endangered gray bat (*Myotis griseescens*) has had a large maternity colony here in the spring and summer.

To protect the bats and, ultimately, the entire cave community, a team of 18 conservationists, helped by a grant from the Conservation Department, built the world's largest chute gate on the cave's natural entrance. A chute gate keeps trespassers out of a cave but allows bats to fly in and out. The gate was completed in 2004.

Tumbling Creek Cave's gray bats were studied extensively because of their large numbers and the importance of the nutrient input provided by their guano. The earliest known population estimate in the cave peaked at 150,000 bats in 1969. In 1976 there were 36,000. Over the next 20 years the population generally remained below 15,000. The last out-flight count before the completion of the new gate was 12,400 in 1998.

We're not sure what caused the decline in the number of gray bats in the cave. There was a general decline

in the species. An internal cave gate might have somehow hindered the bats. Trespassers might have unduly disturbed hibernation sites in the region.

What we do know from internal visual surveys, guano checks and near-infrared video counts of outflights is that the number of gray bats at Tumbling Creek Cave has increased to about 35,000 since the chute gate was installed.

The Conservation Department has increased its efforts to help Missouri cave owners and to teach people about caves and karst.

It is disturbing that the most protected private cave in the Ozarks—in a rural area with little industry or row crops—still developed ecological problems. However, the methods we developed in dealing with those problems will be useful to others.

Through studies, short courses, TV shows and (we hope) articles like this one, the lessons learned at Tumbling Creek Cave have helped many people to better manage caves and groundwater. ▲

Cave Gating and Education

Cave gates protect caves and wildlife from human intruders, but harm can come from improper designs. Designs have changed over the years, and now we know what works and what does not. To learn more, go to www.utexas.edu/tmm/sponsored_sites/biospeleology/ and click on "Cave Gates We Have Known."

The Conservation Department's cave biologist can lend a technical hand and advice to landowners. The Department also provides educational resources on caves and karst. These include publications, guidance documents, teachers' cave trunks, groundwater models and training workshops. For more information, contact Bill Elliott at 573-522-4115 ext. 3194, or e-mail him at Bill.Elliott@mdc.mo.gov.



WILLIAM ARTHUR ELLIOTT

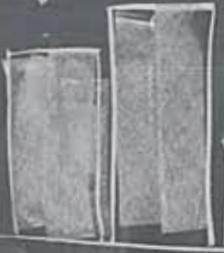
A chute gate is used for low, wide entrances where there is not enough height to build the usual flyover gate for a gray bat maternity colony. This conservation work has allowed gray bats to increase in many protected caves, preventing their extinction.

DUCK ZONES



3 CSR 10-7.415

TURKEY BR



3 CSR 10-6.54



3 CSR

10-11
100 ANTLER POINTS

RESTRICTION

REPRODUCTIVE RATE
HARVEST #'S

1800-08
94008
106329

Making the RULES

The path of *Wildlife Code* regulations runs through Missouri's citizens.

by Eric Kurzejeski

PHOTO ILLUSTRATION BY DAVID STONNER, LES FORTENBERRY AND MARK RATHEL

Missouri
hunters have
a say in the
regulations
put out by the
Conservation
Department.

Con a cold night in January what could be better than attending a public meeting on deer hunting? The Department of Conservation was holding the meeting to discuss potential deer regulation changes. As you would expect, the room in Piedmont was packed with a mix of deer hunters and onlookers.

A gentleman in a co-op cap and blue bibs sat quietly in the second row through more than two hours of dialogue. Finally he raised his hand. "Why can't you use a .410 shotgun with a slug to hunt deer? You let people use a .40 caliber muzzleloader, and the 410 is a .41 caliber."

I had heard a lot of ideas for change that evening. Some were just not feasible, some would require a lot of thought, discussions and number crunching, but this one was nothing but logical. The only reason a .410 slug was not allowed, I had to admit to him, was because nobody had thought to ask us to make it legal.

For most of my 30 years with the Department of Conservation I have been tied in one way or

another to the process of setting hunting regulations. First, I was a biologist making hunting season recommendations, then for many years I was a supervisor of the biologists that made hunting season recommendations.

Our authority for enacting regulations is the foundation of the constitutional mandate that Missourians passed in 1936. That constitutional mandate formed a Conservation Commission and gave them the charge of "protecting and managing the fish, forests and wildlife of the state." The Conservation Commission has always fulfilled this charge with the utmost seriousness.

And, any time the Commission limits personal choice through regulations they require good—no, very good—reasoning.

The logic and reasoning behind regulations usually fall into three categories.

Biological: Is a regulation needed to help manage the population?

An example would be daily or season harvest limits, or it could be a prohibition on harvest, such as the regulation we have protecting prairie chickens and other species of conservation concern.



CLIFF WHITE

Social: Would society find the action acceptable or necessary, and would hunters accept the regulation?

A cornerstone of conservation is the recognition that we must balance the needs of people and the needs of nature. The regulation allowing landowners and homeowners to protect their property from damage by wildlife is an example of blending these needs.

Another example of the role of social considerations in developing regulations is the “4-point rule” put in place in 2004 in 29 counties. This rule requires that deer hunters only take bucks with at least four points on one side of their rack.

The goal of the regulation is to improve both our ability to manage antlerless deer numbers and the age-structure of bucks in the population. But before any decision was made, we first had to know if hunters and farming landowners were willing to accept such a regulation. Were there other, more favorable, options we should consider?

Through public meetings and surveys we first took a “pulse check” of the people. Only after support was measured did we proceed with regulation recommendations. Even with the regulation in place, we have continued to assess hunter and landowner attitudes to see if changes are warranted.

Enforceable: Is the regulation able to be easily followed or understood by the hunter, and can it be enforced?

Can you imagine a regulation that requires a legal bow to cast an arrow at least 160 feet over a horizontal surface? Or that a legal round for deer hunting be required to have a muzzle velocity greater than 2,400 feet per second? How would a hunter be certain they were in compliance? How would an agent check these in the field?

Or what about requiring that a legal buck have a 17-inch spread? Can a hunter easily tell if a deer meets this requirement?

Usually all three concerns, biological, social and enforcement, come into play as a regulation develops.

I am often asked where does public input enter into the regulation equation? Who has or can have input? As you might imagine, public input



See the hunting and fishing calendar on page 32 for the specific season dates. Regulations allow us to both protect and manage wildlife populations.

comes in many ways, and balancing the interests of all and the interests of some is not always easy. The key is that we are always listening.

Missouri has more than 400,000 deer hunters. If we were to get letters or e-mails asking for a certain regulation change from 50 hunters, that would be a substantial number and it would get our attention. It would also raise the question, “How does the average hunter feel about the change?”

John Lewis, MDC’s former wild turkey biologist, my mentor and for many years my supervisor, used to ask me when a regulation change was being considered: “How does the one-gallus hunter feel about this?”

Now, for those of you decked out in the latest state-of-the-art hunting gear, the gallus is the strap holding up one’s bib overalls. John’s reference to the one-gallus hunter, the guy with a broken strap on a worn pair of bibs, was his way of asking how a change would impact the average hunter.

If you have ever been selected for a hunter survey you know how we check the pulse of the average hunter. We ask. Surveys give us the big picture about how people view regulations. E-mails, phone calls, letters, public meetings, one-on-one contacts, all the way to scheduling a hearing with the regulations committee, give people a chance to express their personal opinions. Personal opinions and group opinions are both vital.

We listen to what people say, and we let our biologists, conservation agents and other experts

Any time the Commission limits personal choice through regulations they require good—no, very good—reasoning.



pick apart any new proposed rule. Only then does a recommendation take form. But, now what happens? Who makes the final call?

Essentially, Missourians get that option. The system our citizens put in place in 1936 to "protect and manage the forest, fish and wildlife of the state" ensures that the conservation commissioners, four citizens asked to serve six-year terms by Missouri's governor, make the final call.

The Conservation Commission reviews and takes action on regulation recommendations at their monthly meetings. The recommendations must first be approved by the Department's

CURRENT COMMISSIONERS

The four current commissioners are charged with making the final decision regarding all *Wildlife Code* regulations. To contact the commissioners with your comments, write to Conservation Commission, MDC, P.O. Box 180, Jefferson City, MO 65102-0180.



Don Johnson

Commissioner Don Johnson seldom fishes alone. "When I go fishing," he said, "I always try to take a young person or somebody else with me and give them the opportunity to enjoy the outdoors."

Johnson, who works as human resources vice president for Cequel III Communications in St. Louis, said he mostly casts big plugs for muskies and brings along a cradle to help him release the big fish without harming them. His biggest muskie, caught when he lived in Pennsylvania, was 54 inches long

and weighed 52 pounds. He had that one mounted.

He also loves archery, both target archery and bowhunting. "I have yet to introduce anybody to archery who once they tried it didn't go, 'Oh, that's fun!'" Johnson said.

Archery is easy, he said, but shooting well requires developing the kind of discipline that inevitably brings success to other parts of life. To introduce kids to the benefits of archery, Johnson has helped introduce the National Archery in the Schools Program to Missouri schools.

Johnson, who stepped down from his position as president of the Conservation Federation of Missouri when he was named a conservation commissioner, said Missouri is fortunate in having a conservation commission that takes into account the views of sportspeople and their organizations.

"The thing I like most about it," he said, "is that we're willing to listen to all sides on the issues, and we're willing to change where it's warranted."



William F. "Chip" McGeehan

"No place called home," is how Commissioner William F. "Chip" McGeehan of Marshfield describes his roots. "My dad was in the Air Force," he said, "and I attended 13 different schools—four different high schools." He graduated from Jefferson City High School in 1968.

McGeehan's dad started taking him hunting and fishing when he was 5- or 6-years-old. "I not only enjoyed hunting and fishing, but I also enjoyed the days with my father," he said.

McGeehan went on to obtain a degree in fisheries and wildlife management from Southwest Missouri State University. During his college years, he worked summers as a fisheries assistant with the Conservation Department.

Now a businessman and a rancher (150 head of bison), he continues to enjoy the outdoors. His favorite fish is a catfish, his favorite game animal is a deer, and his favorite outdoor activity is bowhunting for turkeys or deer.

As a conservation commissioner, McGeehan said he tries to blend the recommendations of biologists regarding our resources with the human element, the needs of the people of Missouri. To assist him in his decision-making, he said "I take every opportunity to get out in the community to listen to the comments and opinions and suggestions from the ultimate users, the consumptive users of conservation."

Regulations Committee and our director, but the Commission's four citizens are charged with making the final decision.

As was the case with the gentleman from the Piedmont area (I never got his name), ideas for regulation changes often come from our citizens, and in the end it is four citizens who approve or disapprove changes. In between, as it should be, are a lot of biology, substantial social science, questions of enforceability and many, many, many opinions.

So the next time you have an idea for a regulation don't be shy. Sometimes all it takes is the willingness to ask. ▲



NOPPadol PAOTHONG



Lowell Mohler

You may have bought sweet corn or asparagus grown by Conservation Commissioner Lowell Mohler. He and his wife farm 200 acres near Jefferson City and supervise a farming operation in Holt County.

"My background is all agriculture," Mohler said. He hasn't just grown crops, however. His ties to agriculture include 26 years with the Missouri Farm Bureau and three years as head of the Missouri Department of Agriculture.

Mohler loves to hunt ducks. Like many rural youths, he said he was "born and raised" fishing and hunting. "They're my favorite things to do," he said. "I started at 6 years old and I'm 71 now, so I've been at it a long time."

He likes the way the Conservation Department is reaching out to schools and creating youth hunting opportunities. "We're doing a lot of things for young people," he said, "but we have to keep working at it because there's so much competition for their time today."

Mohler's background in farming and agriculture influences his perspective on conservation. He said his personal goal is to make sure agricultural interests and conservation work together, rather than work against each other.

"A lot of folks that design regulations have never been on a farm," he said. "What I bring to the table is some balance as to what will work and what won't work, and what makes sense and what doesn't make sense."



Becky Plattner

Becky Plattner, the elected presiding commissioner of Saline County, brings to the Conservation Commission the ability to work both governmental and physical landscapes.

Plattner was raised on a hog farm until she was 12. She's been heavily involved in farming ever since, including as a FFA volunteer and honorary member, and in the family business of custom farming, which means farming other peoples' land, as well as their own. She said every bit of land they work

has some kind of conservation partnership involved.

Plattner lives in Grand Pass, close enough to the bottoms to hear frogs calling at night. She remembers hunting bullfrogs as a child. "That was what we did," she said. "We went fishing, and frog hunting was part of it. I used a flashlight and caught them by hand—no gig for me!"

She relishes the Department's nature centers. "I've taken my daughters and other children to them," she said. "It's wonderful that these are available to the public. It shows that conservation has something for everyone—adults, children and communities. I think we have to take care of these gifts."

Plattner hopes her county government background will add a dimension to the Conservation Commission. "I can work with communities and political entities because I understand their perspective," she said. "I come with an open mind. My philosophy is, 'What can we do? Let's work together.'"

TAKE A BREAK AT Powder Valley

Get natural relief from
urban stress at this St. Louis
area nature center.

by Tamie Yegge, photos by David Stonner



Powder Valley CNC's attractions include watching wildlife, hiking trails and exploring the many new exhibits and gardens.

Looking for a break from your routine? Are working, housework, laundry, cooking and cleaning out the garage wearing you down? Are the kids staring too much at the TV or their video games? Do you wish there was a place that had something for everyone, got you outside and didn't cost anything?

I've got the perfect answer. Visit Powder Valley Conservation Nature Center in Kirkwood. Even though it's been around a long time, there are plenty of new things to see and do there.

Powder Valley CNC is a conservation interpretation facility nestled on 112 acres of oak-hickory forest on the northeast corner of Interstates 270 and 44 in Kirkwood.

During the mid-1980s, the Missouri Department of Conservation, looking for a location to serve people in the St. Louis area, purchased this land from the Alwal Moore family.

Once they'd found just the right place, development began. Constructing the building took about 15 months. The doors opened to the public for the first time on Oct. 25, 1991. Since then, more than 1.5 million people have visited the area.

Powder Valley owes its name to the property's Civil War use as a storage site for explosives. After the battle of Pilot Knob, Union militia stored blasting powder in a cave located in one of the valleys near this area to prepare for a possible invasion of St. Louis by Confederate troops.

During World War I, the DuPont de Nemours Company used nearby sites to manufacture and store explosives. The caves that hid the explosives were across the highway, closer to the Meramec River. They likely collapsed when Interstates 270 and 44 were built.



Attractions

The nature center itself is a 22,000-square-foot building with 3,500 square feet of exhibits. The exhibits are brand-new. The remodeling was finished this year.

The facility also has a 250-seat auditorium and four classrooms to accommodate naturalist-led programs and meetings of conservation-related groups.

A wildlife viewing station, living beehive and 3,000-gallon fish aquarium provide opportunities to observe wildlife up close.

The gift shop is packed with Conservation Department publications and other nature-related merchandise, including bird feeders, compasses and items for children.

On Your Visit

Follow the tracks up the front walk to a map of the area and a native plant garden with signs that identify many of the plants.

One of the first things you'll want to see in the nature center is a mount of the Missouri Monarch, the world record non-typical white-tailed deer that was found in St. Louis County in 1983.

In a room off the lobby, you'll spot the Kids Corner, where children can play in a puppet theater with wildlife puppets and touch various natural items like fur, feathers, bones, nuts, turtle shells and more. Kids love to do leaf rubbings here and then take them home as keepsakes.

Get ready to use all your senses to learn about backyard wildlife and habitats, protecting streams, fishing, hunting and wildlife conflicts in the Welcome to the Neighborhood

exhibits area. Three large dioramas of various urban habitat types portray the local flora and fauna. Adults can design their own native plant garden for their yard using GrowNative! information and materials.

Kids (and kids at heart) love to explore the real tree house, complete with a "rope" bridge. It is full of things kids love: collections of frogs, woods and bugs, a turtle skeleton, a tree "cookie," which has rings marked for special years, and a creepy surprise or two.

Be sure to look into the aquarium from above and below. If you visit around 1 p.m. on Sundays, you can watch us feed the fish.

Films of conservation topics are shown in the auditorium every weekend, and each month a new artist's work is exhibited in our hallway "gallery."

Check out the beehive, which was donated by Mr. Ted Jansen, and draw a picture for our display before you leave. Ted volunteers his time as often as necessary to care for and advise staff on the health of the hive. He also has given programs and invaluable education to our employees.

You'll also want to visit the wildlife viewing area, where you can catch glimpses of many different types of song birds, as well as turkeys, squirrels, chipmunks, raccoons, opossums and deer. If you want a closer look, you can borrow some binoculars at the front desk.

To learn more about what you've seen, visit the library,

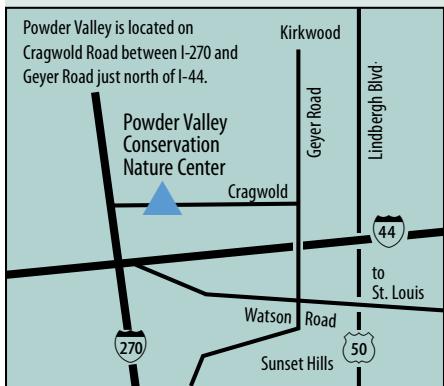


There are numerous ways for a family to learn about and enjoy nature at Powder Valley CNC such as seeing the world from a deer's perspective (left), walking the paved Tanglevine Trail (top) or watching songbirds and other animals from the wildlife viewing window (above).

Building Hours: Daily from 8 a.m. to 5 p.m.

Area Hours: Daily 8 a.m. to 8 p.m. during daylight saving time, and 8 a.m. to 6 p.m. the rest of the year. Closed New Year's Day, Thanksgiving and Christmas.

For more info: 314-301-1500 or www.missouriconservation.org/2343



One of the new exhibits at Powder Valley CNC is a tree house where boxes, drawers and even the floor are to be explored.

which is full of nature and conservation books and magazines for adults and children. Relax in the library's rocking chair as you read, or gaze out the large window facing the forest as you relax and unwind.

Trekking

All three of the nature center's trails are paved to prevent erosion and to make them easier to negotiate. The shortest, Tanglevine, is about one-third mile long, and its gentle slopes are disabled accessible. The trail goes by a small pond. Signs help interpret various points of interest along the trail.

Broken Ridge Trail is two-thirds mile long. It criss-crosses a creek lined with oak, hickory and maple trees and traverses some of the area's steepest hills.

Hickory Ridge Trail is 1.2 miles long, but it has a half-mile loop if you don't have time to hike the whole trail. The trail runs through cool forested valleys, over hilltops, across seasonal creeks and along a small pond with a boardwalk.

Natural Business

The 13 full-time and five to six part-time staff members at Powder Valley Nature Center are assisted by more than 70 volunteers. They greet visitors, answer questions, make referrals, answer phones, assist with the gift shop, help care for our display animals, work on special projects and conduct or assist with programs. Volunteers are the lifeblood of Powder Valley CNC. It would be impossible to take care of everything without them.

Our business office responds to requests and inquiries from walk-in and phone traffic seven days a week. A clerical team answers around 2,000 phone calls each month. They talk to people about anything from dealing with young animals to interpreting hunting and fishing regulations. The staff includes representatives from the Outreach & Education, Wildlife, Private Land Services, Forestry and Protection divisions of the Conservation Department.

The staff keeps the gift shop running and assists visitors at the front desk. They send out mountains of information, including maps of conservation areas, hunting and fishing regulations and brochures. A maintenance team spends their days keeping the inside and the outside clean and orderly for your visit.

The staff and volunteers at Powder Valley work hard to make your visit to the nature center pleasant, helpful and educational. A naturalist team provides programs for schools, groups and the general public on a wide variety of conservation topics. They take care of the exhibit animals and provide special events to ensure you have new and different opportunities when you visit.

Take advantage of our efforts. Put away the lawn mower, put down your rake and forget about housework for a day. Pry the remote from those little hands and bring the children to the nature center to wander among the exhibits, hike the trails, watch some wildlife, plan your wildflower garden and enjoy time together as a family. We'll be here to greet you. ▲

Hunting and Fishing Calendar

FISHING	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/26/07	2/29/08
impoundments and other streams year-round		
Bullfrog	Sunset	Midnight
	6/30/07	10/31/07
Gigging nongame fish	9/15/07	1/31/08
Trout Parks	3/1/07	10/31/07
HUNTING	OPEN	CLOSE
Common Snipe	9/1/07	12/16/07
Coyotes	5/7/07	3/31/08
Crow	11/1/07	3/3/08
Deer		
Archery	9/15/07	11/9/07
	11/21/07	1/15/08
Firearms		
Urban Counties (antlerless only)	10/5/07	10/8/07
Youth	10/27/07	10/28/07
November Portion	11/10/07	11/20/07
Muzzleloader	11/23/07	12/2/07
Antlerless	12/8/07	12/16/07
Dove	9/1/07	11/9/07
Furbearers	11/15/07	1/31/08
Groundhog	5/7/07	12/15/07
Pheasants		
North Zone	11/1/07	1/15/08
South Zone	12/1/07	12/12/07
Youth (north zone only)	10/27/07	10/28/07
Quail	11/1/07	1/15/08
Youth (statewide)	10/27/07	10/28/07
Rabbits	10/1/07	2/15/08
Ruffed Grouse	10/15/07	1/15/08
Sora and Virginia Rails	9/1/07	11/9/07
Squirrels	5/26/07	2/15/08
Teal	9/8/07	9/23/07
Turkey		
Fall Archery	9/15/07	11/9/07
	11/21/07	1/15/08
Fall Firearms	10/1/07	10/31/07
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see www.missouriconservation.org/7573	
Woodcock	10/15/07	11/28/07
TRAPPING	OPEN	CLOSE
Beaver and Nutria	11/15/07	3/31/08
Furbearers	11/15/07	1/31/08
Otters and Muskrats	11/15/07	see <i>Wildlife Code</i>

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.missouriconservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicense.com/mo/.



"Help yourself to the garbage of the best recyclers in the neighborhood—no plastics, papers, cans or jars—just pure, rotten food!"

Contributors



CATHERINE L. ALEY is co-owner and biologist for the Ozark Underground Laboratory. She is an accomplished naturalist, conservationist, carpenter, gardener and chef.

THOMAS J. ALEY is a hydrologist, caver and forester. Director of the Ozark Underground Laboratory, he teaches college and professional groups above and below ground.



DR. WILLIAM R. ELLIOTT, Department cave biologist, recently received the National Speleological Society's Honorary Membership Award for contributions in science and conservation.



AARON HOLASAPPLE works in Linn as a resource forester. He and his wife, Lynne, enjoy camping with their two very curious daughters, ages 3 and 5. He also plays guitar and enjoys singing.



ERIC KURZEJESKI has worked on regulations issues for most of his 30 years with MDC, but come fall, you'll find him in a tree stand. His wife, Lori, suggested changing his name to "Sits-in-Tree."



TAMIE YEGGE manages Powder Valley CNC. She has always loved nature and grew up camping, hiking, canoeing and fishing with family, traditions she now shares with her own children.

TIME CAPSULE

October 1967

Colors From Trees by Virginia S. Eifert explains how dyes were derived from trees in pioneer America. Obvious uses for the abundance of trees included food and fuel, material for building houses, furniture, and vehicles, but

also, "Hidden in certain trees lay secrets of dyes which had to be discovered one at a time." One of the most useful dye trees was the sumac. The shoots, bark, roots, leaves and the fuzzy red fruits all had their uses in making dyes. It is best known, however, for making a healthy-looking yellow-tan color. Black walnut hulls produced brown and black dyes, black oak gave buff, gold or orange color. White oak gave a dove gray, and the willow gave a rosy tan color. Blues, reds or bright greens were not found in the dyes of trees.—Contributed by the Circulation staff



AGENT NOTES

Protecting wildlife, promoting sportsmanship and providing opportunities

WHY WAS THIS rule changed, or why was that rule added? These are questions I have been asked many times while working as a conservation agent. What factors go into conservation regulations? There are several.

One factor that is considered is whether or not the rule is scientifically sound. Will this law benefit the fish, forest and wildlife of Missouri? Will it help sustain a healthy population of the species it covers? Another important consideration deals with the idea of fair chase. There are laws in the *Wildlife Code* that might not seem to protect the actual populations of wildlife; however, these laws are in place to make sure sportsmen practice fair and ethical hunting, fishing and trapping.

Other laws are in place to help promote safe hunting and give all sportsmen equal opportunity. With all wildlife regulations one of the most important factors is the public. Is this rule fair to them? Can it be enforced and complied with? Are the majority of the people in favor of the rule, and will they be able to understand and follow it?

There are many factors to consider before adding or removing a regulation. The Conservation Department likes hearing your comments regarding any wildlife regulation. Write to us at Regulations Committee, MDC, P.O. Box 180, Jefferson City, MO 65102-0180.



Jason Vaughn is the conservation agent for Moniteau County, which is in the Central region. If you would like to contact the agent for your county, phone your regional Conservation office listed on page 3.

behind the CODE

Setting nonresident deer permit fees.

BY TOM CWYNAR



Nonresident Firearms Any-Deer Hunting permit costs \$175 in Missouri.

This seems a bargain compared to prices in neighboring Kansas, Iowa and Illinois, where nonresidents have to pay about \$300 to hunt deer, and they might have to go through a lottery to get a license. Some states charge less than Missouri for nonresident permits. Our prices are just below the national average.



Some of the Missourians who hunt deer in states with high-priced licenses have suggested that we charge nonresidents equivalent fees. Doing so would set up a complicated price structure that would have hunters paying different prices for the same privileges.

Currently our Nonresident Any-Deer permits cost more than 10 times what residents have to pay for their Any-Deer permits. For 1958 deer hunting permits, the multiple was four—\$5 versus \$20.

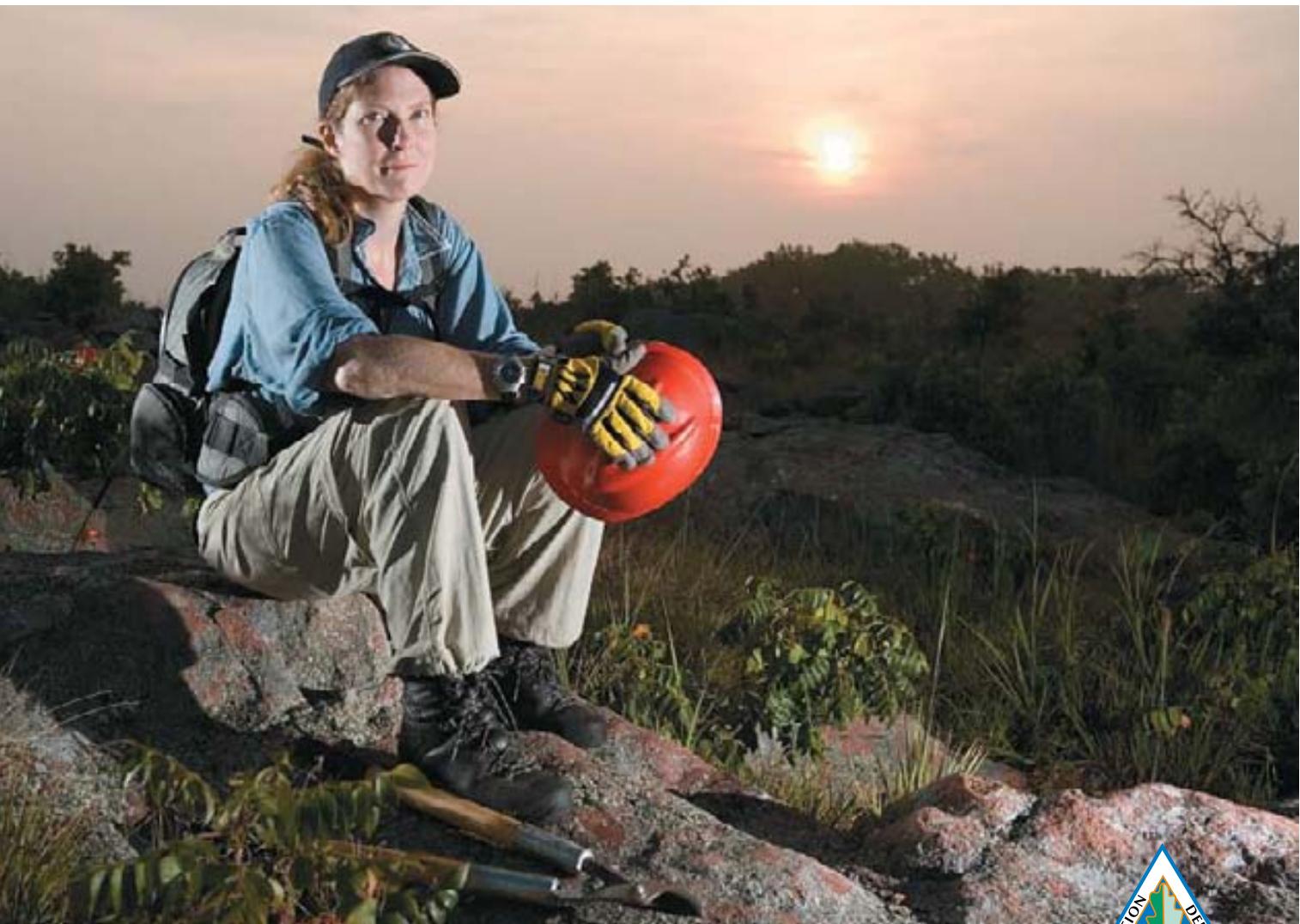
The philosophy behind Missouri's nonresident permit prices is to be competitive among neighboring states without keeping hunters away. Many nonresident hunters grew up in Missouri or have family here. They are Missourians at heart.

We allow nonresidents to purchase an Antlerless-Only permit for \$7, the same price residents pay, but they must first buy the \$175 Any-Deer Permit. Their harvest of does helps us manage the deer population.

Based on 2006 permit sales, about one in 40 Firearms Any-Deer permits sold go to nonresidents.

“I AM THE NEXT GENERATION OF CONSERVATION”

Linda Meade adopted 4 miles of the Blair Creek section of the Ozark Trail as part of the Adopt a Trail Program. Program participants do light maintenance work to help maintain trails. Meade goes hiking almost every weekend. “If I don’t get out into the woods at least twice a month, I’m not fit for human companionship.” For more information about the Adopt a Trail Program, visit www.missouriconseration.org/8802.—PHOTO BY DAVID STONNER



Subscribe online

www.missouriconseration.org/15287

Free to
Missouri households